Malignant Melanoma metastasizing to the Thyroid Gland: A Case Report and Review of the Literature

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Malignant Melanoma Metastasizing To The Thyroid Gland: A Case Report And Review Of The Literature

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Abstract

Objective: The thyroid gland is a relatively uncommon site for secondary malignancy. Even less common is metastasis of malignant melanoma to the thyroid gland. We present a case of malignant melanoma metastatic to the thyroid gland presenting as thyroid enlargement.

Study Design: This is a case report which utilizes chart review, intraoperative photographs, radiographic images, and pathology slides.

Methods: A 68-year-old male with no prior evidence of primary skin melanoma presented with a neck mass which tested positive for melanoma. A year and a half following modified radical neck dissection, the patient presented with a diffusely enlarged thyroid gland from which fine needle aspiration revealed metastatic malignant melanoma.

Results: A few months following this, the patient began having seizures and was found on MRI to have metastatic disease to the brain. He developed ventilator dependent respiratory failure and required a tracheostomy for airway control.

Conclusions: Patients with a history of malignancy and a thyroid nodule present a diagnostic dilemma—it is benign, a new primary, or distant metastasis? Review of this case and the literature strengthens the argument that any patient with a history of malignancy and a thyroid mass should be considered as having metastasis until proven otherwise.

Introduction

The incidence of metastases to the thyroid gland in autopsy series has been reported to range between 1.25-24%. The most common sources of metastases are renal cell carcinoma, breast carcinoma, and lung carcinoma. Clinically apparentspread of malignant melanoma to the thyroid gland is rare, accounting for less than 3% of metastatic tumors to the thyroid.

We present a case of a patient with malignant melanoma metastatic to the thyroid gland as an early manifestation of distant metastatic disease, as well as a review of the literature.

Case Report

A 68-year-old male with a 30 pack year tobacco history presented with a 1.5cm left posterior triangle neck mass. Physical exam and radiographs performed at the time failed to reveal a primary tumor. An FNA of the mass at the time revealed a poorly differentiated squamous cell carcinoma. The patient was taken to the operating room for staging endoscopy and a repeat FNA. Again, there was no evidence of a primary lesion, but FNA at this time was suggestive of melanoma, and this diagnosis was confirmed via immunophenotyping, which showed the cells staining positive for Melan A and S-100.

Histology showed the thyroid largely being replaced by metastatic melanoma with extensive necrosis. Additional radiographic images, and pathology slides led the surgical team to conclude that the patient had metastatic melanoma to the thyroid gland, but thyroid function remained preserved.

Eighteen months later, the patient presented with a 10cm midline neck mass representing a diffusely enlarged thyroid gland. An FNA was performed which revealed melanoma. The patient underwent an MIBI of the neck, revealing a diffusely enlarged cystic thyroid gland with no cervical adenopathy. Two weeks later, the patient began having seizures, and an MIBI of the brain revealed a 1.7cm mass as the region of the anterior superior vermis, with associated mass effect and mild hydrocephalus. This was suspicious for metastasis. A CT scan of the chest, abdomen, and pelvis was obtained, showing a soft tissue lesion in the suprapyloric region consistent with metastasis. The patient soon developed ventilator dependent respiratory failure, and was taken to the operating room for staging endoscopy and a repeat FNA. Again, there was no evidence of a primary lesion, but FNA at this time was suggestive of melanoma, and this diagnosis was confirmed via immunophenotyping, which showed the cells staining positive for Melan A and S-100.

Histology showed the thyroid largely being replaced by metastatic melanoma with extensive necrosis. Additional radiographic images, and pathology slides led the surgical team to conclude that the patient had metastatic melanoma to the thyroid gland, but thyroid function remained preserved.

Discussion

The case presented above is similar to the few other case reports detailing metastatic melanoma to the thyroid gland. As with our patient, the most common complaint among patients with metastatic disease is a neck mass, with the majority of patients having a history of malignancy with a previous history of metastases.

In discussing melanoma specifically, patients with metastatic melanoma have a median survival of 24 months, irrespective of site of metastasis. Less than 1% of melanoma patients have single organ metastasis, and when combined with other poor prognostic indicators, surgical management of metastatic melanoma is most often limited to palliative measures.[1,2] Thyroidectomy is an acceptable modality of treatment for relief of dyspnea on dysphagia, or as in our patient, performing a tracheostomy. In the rare case that the thyroid is the only site of metastatic deposits, thyroidectomy can be curative.[3]

Any patient with a history of malignancy and a thyroid nodule presents a diagnostic dilemma. Is it a benign nodule, a new primary, or a metastasis? The FNA can be very helpful in distinguishing these entities. If it represents metastatic disease, is it a “new” metastasis suggesting a neoplastic recurrence, or is it merely the growth of microscopic deposits from a much earlier neoplasm?[4] Others have authored similar dilemmas—why do melanomas in the thyroid gland years before, and years after the primary lesion is discovered?[5,6] Nakajima et al report months between detection of primary malignancy and metastases to the thyroid. Our case is especially difficult as no primary lesion was ever found. However, given high the incidence of thyroid metastases in malignancy, and given the long time period between initial neoplasm and discovery of thyroid metastases, we must agree with Nakajima et al that any patients with a previous history of malignancy with a thyroid mass should be considered as having metastases until proven otherwise.

References